

**REMARKS**

In the outstanding non-final Office Action<sup>1</sup> ("Office Action"), the following actions were taken:

1. the title of the invention was objected to (Office Action at 2);
2. the disclosure was objected to due to alleged informalities (*Id.*);
3. the disclosure was objected to under 35 U.S.C. § 112, first paragraph (*Id.* at 3);
4. claims 1-3, 5-9, and 11-13 were objected to due to alleged informalities (*Id.*);
5. claims 1-13 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for "failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention" (*Id.* at 4);
6. claims 1-13 were rejected under 35 U.S.C. § 101 (*Id.* at 5);
7. claims 1, 3, 7, 9, and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0230794 A1 to England et al. (hereafter "England"), in view of U.S. Patent No. 5,805,790 to Nota et al. (hereafter "Nota");
8. dependent claims 2 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over England and Nota, and further in view of U.S. Patent No. 4,674,038 to Brelsford et al. (hereafter "Brelsford");
9. dependent claims 4, 6, 10, and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over England and Nota, and further in view of U.S. Patent No. 6,633,942 to Balasubramanian (hereafter "Balasubramanian"); and
10. dependent claims 5 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over England, Nota, and Brelsford, and further in view of U.S. Patent No. 5,499,379 to Tanaka et al. (hereafter, "Tanaka").

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<sup>1</sup> The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Below, Applicants respectfully traverse the above identified objections and rejections.

**1. Objection to the title of the invention**

In the Office Action, the Examiner objected to the title of the invention, contending that it is "not descriptive". Office Action at 2. Without agreeing with the Examiner's contentions, and solely in the interest of advancing prosecution, Applicants have appropriately amended the title of the invention. Accordingly, Applicants respectfully request that the Examiner withdraw the objection to the title of the invention.

**2. Objection to the disclosure due to alleged informalities**

In the Office Action, the Examiner objected, citing alleged informalities, objected to the disclosure. Office Action at 2. Without agreeing with the examiner's contentions, and solely in the interest of advancing prosecution, Applicants have appropriately amended paragraphs [0001]-[0004], [0006]-[0011], and [0013]-[0014]. Accordingly, Applicants respectfully request that the Examiner withdraw the above-identified objections to the disclosure.

**3. Objections to the disclosure under 35 U.S.C. § 112, first paragraph**

In the Office Action, the Examiner objected to the disclosure under 35 U.S.C. § 112, first paragraph, as being "replete with terms which are not clear, concise, and exact." Office Action at 3. Particularly, the Examiner stated that "unclear, inexact or verbose terms used in the specification are shown above." *Id.* Without agreeing with the Examiner, and solely to advance prosecution, Applicants have made amendments discussed in the section above. Accordingly, Applicants respectfully request that the

Examiner withdraw the objections to the disclosure under 35 U.S.C. § 112, first paragraph.

**4. Objections to claims 1-3, 5-9, and 11-13**

In the Office Action, the Examiner objected to claims 1-3, 5-9, and 11-13 as allegedly having informalities. Office Action at 3-4. Without agreeing with the Examiner's contentions, and solely in the interest of advancing prosecution, Applicants have amended claims 1-3, 5-9, and 11-13, in keeping with the Examiner's suggestions. However, Applicants have not replaced the term "sub operating system" with the phrase "sub-operating system," as suggested by the Examiner, as Applicants believe that the term "sub operating system" is more appropriate. Accordingly, Applicants respectfully request that the Examiner withdraw the objections to claims 1-3, 5-9, and 11-13.

**5. The Examiner's rejection of claims 1-13 under 35 U.S.C. § 112, second paragraph should be withdrawn**

In the Office Action, the Examiner rejected claims 1-13 under 35 U.S.C. § 112, second paragraph, for allegedly "failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." Office Action at 4.

Particularly, the Examiner contends that in claims 1, 7, and 18, it is "unclear what it means for an operating system to be in an 'interrupt enabled state' or an 'interrupt disabled state.'" *Id.* In response, Applicants respectfully point the Examiner to at least paragraphs [0013], [0019], [0025], [0065]-[0067], [0074]-[0080], [0082], and [0084]-[0087], where the specification elaborates on the meaning of the terms 'interrupt enabled state' and 'interrupt disabled state.'

The Examiner further contends that "[a]s to claim 1, lines 18-19, claim 7, lines 22-23, and claim 13, lines 22-23, it is unclear what is 'based on the status information.'"

Without agreeing with the Examiner's contentions, Applicants have amended claims 1, 7, and 13 to obviate the Examiner's concerns and expedite prosecution.

Lastly, the Examiner contends that the meaning of 'or' in claims 5 and 11 is unclear. Again, without agreeing with the Examiner's contentions, Applicants have amended claims 5 and 11 to obviate the Examiner's concerns and expedite prosecution.

#### **6. The rejection of claims 1-13 under 35 U.S.C. § 101**

In the Office Action, the Examiner rejected claims 1-6 under 35 U.S.C. § 101 for being "directed to non-statutory subject matter." Office Action at 5. Particularly, the Examiner contended that the claims appear to be "comprised of software alone without claiming associated computer hardware required for execution." *Id.* Without agreeing with the Examiner, and solely in the interest of advancing prosecution, Applicants have amended independent claim 1 to address the Examiner's concerns. As claims 2-6 depend from claim 1, Applicants respectfully request that the Examiner withdraw the rejections of claims 1-6 under 35 U.S.C. § 101.

Further, the Examiner rejected claims 7-12 under 35 U.S.C. § 101 for allegedly "not falling within one of the four statutory categories of invention." Office Action at 5. Particularly, the Examiner asserts that the claims are "neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore, [do] not qualify as a statutory process." *Id.* In light of the recent Supreme Court decision in *Bilski v. Kappos*, and the USPTO's interim

guidance Memorandum dated June 28, 2010 ("Memorandum"), however, Applicants respectfully submit that these claim rejections should be withdrawn. According to the Memorandum, claims should not be rejected under 35 U.S.C. § 101 if there is a "clear indication that the method is not directed to an abstract idea." Memorandum at 2.

Claim 7, as amended, recites an interrupt process control method for performing data processing on a plurality of operating systems. The claim involves managing at least one hardware resource such as a processor or memory, and is clearly not directed to an abstract idea. Claims 8-12 are also not directed to abstract ideas, at least due to their dependence from claim 7. Accordingly, Applicants respectfully request withdrawal of the rejections of claims 7-12 under 35 U.S.C. § 101.

Lastly, claim 13 was rejected under 35 U.S.C. § 101 as allegedly being "directed to non-statutory subject matter." Office Action at 6. Particularly, the Examiner asserts that claim 13 is "directed to an computer program and appears to be comprised of software alone without claiming associated computer hardware required for execution."

*Id.* Without agreeing with the Examiner, and solely in the interest of advancing prosecution, Applicants have amended claim 13 to address the Examiner's concerns. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims 13 under 35 U.S.C. § 101.

**7. The rejection of claims 1, 3, 7, 9, and 13 under 35 U.S.C. § 103(a) over England in view of Nota**

In the Office Action, claims 1, 3, 7, 9, and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over England in view of Nota. Applicants respectfully traverse these claim rejections.

Independent claim 1 is directed to an apparatus and recites, in relevant part:

the main operating system, along with ... the sub operating system ...  
managing a hardware resource relating to the logical partition,

...

the main operating system .. controlling the interrupt process, based on  
the status information, to perform one of an interrupt process execution and an  
interrupt process reserve, in response to generation of the interrupt.

England and Nota, alone or in combination, fail to teach or suggest at least the  
elements recited above.

First, England and Nota, alone or in combination, fail to teach or suggest "the  
main operating system, along with ... the sub operating system ... managing a  
hardware resource relating to the logical partition," as recited in claim 1. Citing para.  
[0007], lines 1-8 of England, the Examiner contends that England teaches the above-  
identified element of claim 1. Office Action at 7. But para. [0007], lines 1-8 of England,  
simply discloses:

Certain techniques allow operating systems to exist side-by-side on the  
same machine without the use of a virtual machine monitor. One such  
technique is to have one operating system act as a "host" for the other  
operating system. (The operating system that the "host" is hosting is  
sometimes called a "guest.") In this case, the host operating system  
provides the guest with resources such as memory and processor time.

Even assuming, *arguendo*, that para. [0007] of England discloses a "main operating  
system" and a "sub operating system," as recited in claim 1, neither para. [0007], nor  
England as a whole teaches or suggests "the main operating system, along with ... the  
sub operating system ... managing a hardware resource relating to the logical partition,"  
where "the main operating system, along with ... the sub operating system ... [sets the]  
logical partition as a process unit," and "the sub operating system ... [operates] within  
the logical partition." Moreover, Nota does not make up for the above-identified

deficiencies of England. Accordingly, no combination of England and Nota teaches or suggests the above-identified element of claim 1.

Second, England and Nota, alone or in combination, fail to teach or suggest "the main operating system .. controlling the interrupt process, based on the status information, to perform one of an interrupt process execution and an interrupt process reserve, in response to generation of the interrupt," as recited in claim 1.

Citing para. [0119], lines 1-8 of England, the Examiner contends that England teaches "the main operating system controlling the interrupt process to perform one of an interrupt process execution and an interrupt process reserve." Office Action at 8.

But para. [0119], lines 1-8 of England simply states, in relevant part:

When the guest is running, then the guest ISR is called. Since the guest operating system typically contains fewer device drivers than the host, it will commonly be the case that the guest will wish to invoke the host operating system and its drivers to service the device interrupt. The guest can securely invoke the host operating system and its drivers ...

Contrary to the Examiner's assertion, the simple disclosure of a guest operating system invoking a host operating system to service a device interrupt does not teach or suggest "the main operating system ... controlling the interrupt process ... to perform one of an interrupt process execution and an interrupt process reserve," as recited in claim 1.

Although the Examiner correctly concedes that England does not teach "that the controlling of the interrupt process is done in response to the generation of the interrupt based on the status information," he nevertheless asserts that Nota at figs. 2 and 14, and col. 15, lines 44-50 makes up for this deficiency of England. Office Action at 8. But figs. 2 and 14 of Nota serve to simply disclose a "program status" related to "interruption information." Moreover, col. 15, lines 44-50 of Nota states, in relevant part:

Real processor 2 stores a guest interruption code indicating the guest interruption in the virtual processor 1 control 45 information of guest operating system 1 in the multiprocessor configuration assigned with the fault real processor and in the virtual processor 1 control information of guest operating system 2 in the single processor configuration assigned with the fault real processor (step 1604).

Merely teaching information relating to a "real processor" storing a "guest interruption code indicating [a] guest interruption in [a] virtual processor" does not result in a teaching or suggestion of "[a] main operating system .. controlling the interrupt process, based on the status information, to perform one of an interrupt process execution and an interrupt process reserve, in response to generation of the interrupt," as recited in claim 1.

Accordingly, no combination of England and Nota teaches or suggests "the main operating system .. controlling the interrupt process, based on the status information, to perform one of an interrupt process execution and an interrupt process reserve, in response to generation of the interrupt," as recited in claim 1.

For at least these reasons, England and Nota, alone or in combination, fail to teach or suggest at least (1) "the main operating system, along with ... the sub operating system ... managing a hardware resource relating to the logical partition," and (2) "the main operating system .. controlling the interrupt process, based on the status information, to perform one of an interrupt process execution and an interrupt process reserve, in response to generation of the interrupt," as recited in claim 1. Independent claims 7 and 13, although of different scope, contain elements similar to those of claim 1 that are not disclosed by England and Nota. Therefore, like independent claim 1, claims 7 and 13 are also patentable over England and Nota. Dependent claims 3 and 9



are also patentable over England and Nota at least by virtue of their dependence from the above-identified independent claims. Applicants therefore respectfully request that the Examiner withdraw the rejection of claims 1, 3, 7, 9, and 13 under 35 U.S.C. § 103(a).

**8. The rejection of dependent claims 2, 4-6, 8, and 10-12 under 35 U.S.C. § 103(a) over England in view of Nota, and further in view of one or more of Brelsford, Balasubramanian, and Tanaka**

In the Office Action, the Examiner rejected claims 2 and 8 under 35 U.S.C. §103(a) as being unpatentable over England in view of Nota and Brelsford; rejected claims 4, 6, 10, and 12 under 35 U.S.C. §103(a) as being unpatentable over England in view of Nota and Balasubramanian; and rejected claims 5 and 11 under 35 U.S.C. §103(a) as being unpatentable over England in view of Nota, Brelsford, and Tanaka. Office Action at 10-15. Applicants respectfully traverse these rejections.

As demonstrated above with respect to independent claim 1, England and Nota fail to disclose at least “the main operating system, along with ... the sub operating system ... managing a hardware resource relating to the logical partition,” and “the main operating system .. controlling the interrupt process, based on the status information, to perform one of an interrupt process execution and an interrupt process reserve, in response to generation of the interrupt,” as recited in claim 1. Also as demonstrated above, independent claim 7 contains elements similar to the above-identified elements of claim 1 that England and Nota fails to teach. Brelsford, Balasubramanian, and Tanaka, alone or in combination, fail to cure the deficiencies of England and Nota, and therefore claims 1, 7, and 13 are patentable over England, Nota, Brelsford, Balasubramanian and Tanaka. Dependent claims 2, 4-6, 8, and 10-12 are also

patentable at least by virtue of their dependence from claims 1 and 7. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims 2, 4-6, 8, and 10-12 under 35 U.S.C. § 103(a).

**Conclusion**


In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

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By:  Reg #63,292  
for David W. Hill  
Reg. No. 28,220